



Students are Not Code to be Written: Redefining Overt Instruction in AI Language Learner Eco-Literacy Classroom

Ahmad Iklil Saifulloh^{1*} , Pratiwi Retnaningdyah² , Ali Mustofa² 

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Abstract: This study investigated how overt instruction enhanced learner autonomy and supported innovative assessment in an English language classroom at an Indonesian Islamic green university, where digital technologies were integral to learning. **Purposes:** Responding to persistent structural challenges in Indonesian literacy education, it explores how multiliteracies pedagogy (New London Group), Freire's problem-posing education, Vygotskian social constructivism, and AI-mediated learning could be combined to promote quality education. **Methodology:** A transformative qualitative case study was conducted through semester-long classroom observations, collection of student multimodal artefacts, and thematic multimodal analysis. **Result:** Findings revealed a clear progression from teacher-led ecological literacy guidance to student-driven inquiry, as learners utilized digital design tools such as Canva and Veed.io to create documentaries, games, and civic campaigns. Formative and performance-based assessments captured both process and product, while lecturer transparency and emotional scaffolding provided valid criteria and addressed challenges from AI-generated outputs. **Recommendation:** The study contributed to the advancement of Quality Education by demonstrating that overt instruction, reframed as dialogic and affective guidance, cultivated critical engagement and independent decision-making while also offering practical strategies for equitable, AI-resilient assessment practices.

Keywords: Overt Instruction, Artificial Intelligence, Multiliteracies Pedagogy Frameworks, Autonomous Learning.

الطلاب ليسوا شيفرة لِنكتبها: إعادة تعريف التوجيه الظاهر في صف التعلّم اللغوي بالذكاء الاصطناعي والوعي البيئي

أحمد إكليل سيف الله^{1*}، و براتيوي رتنا نينغديه²، و علي مصطفى²

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الملخص: تبحث هذه الدراسة في كيفية تعزيز التعليم الصريح (Overt Instruction) لاستقلالية المتعلمين ودعم أساليب تقييم ابتكارية في صف لتعليم اللغة الإنجليزية بجامعة إسلامية خضراء في إندونيسيا حيث تُعدّ التقنيات الرقمية جزءاً أساسياً من عملية التعلّم. **الأهداف:** استجابةً للتحديات البنوية المستمرة في تعليم محو الأمية في إندونيسيا، تستكشف الدراسة كيفية دمج بيداغوجيا التعددية المعرفية (مجموعة نيو لندن)، وتعليم طرح الإشكاليات عند فرييري، والبنائية الاجتماعية لفيغوتسكي، والتعلم بوساطة الذكاء الاصطناعي من أجل تعزيز التعليم الجي. **المنهجية:** اعتمدت الدراسة حالة نوعية تحويلية من خلال ملاحظات صقيّة على مدار فصل دراسي كامل، وجمع أعمال طلابية متعددة الوسائط، وتحليل موضوعي متعدد الوسائط. **النتائج:** أظهرت النتائج انتقالاً واضحاً من توجيه المعلم لمحو الأمية البيئية إلى بحث يقوده الطلاب، حيث استخدم المتعلمون أدوات التصميم الرقمي مثل Canva و Veed.io لإنتاج أفلام وثائقية وألعاب وحملات مدنية. كما التقطت التقييمات التكوينية والأدائية كلاً من العملية والمنتج، في حين وفّرت شفافية المحاضر والدعم العاطفي معايير موثوقة للتعامل مع التحديات الناتجة عن مخرجات الذكاء الاصطناعي. **التوصيات:** تُسهم هذه الدراسة في تعزيز هدف التنمية المستدامة الرابع (التعليم الجيد) من خلال إظهار أن التعليم الصريح، عندما يُعاد صياغته كإرشاد حوارِي وعاطفي، يمكن أن ينمّي المشاركة النقدية واتخاذ القرار المستقل، ويقدم استراتيجيات عملية لتصميم تقييمات عادلة وقادرة على مقاومة تأثيرات الذكاء الاصطناعي. **الكلمات المفتاحية:** التوجيه الظاهر، الذكاء الاصطناعي، أطر بيداغوجية التعدّد المعرفيّة، التعلّم المستقل.

1 English Education Study Program, Faculty of Language and Literature, Universitas Islam Majapahit, Mojokerto, Indonesia

2 English Education Study Program, Faculty of Language and Literature, State University of Surabaya, Surabaya, Indonesia.

* Corresponding author: iklilsaifulloh@unim.ac.id

ORCID id: <https://orcid.org/0000-0002-4106-8250>

1 برنامج دراسة تعليم اللغة الإنجليزية، كلية اللغة والأدب، جامعة الإسلام ماجاهيت، موجكورتو، إندونيسيا
2 برنامج دراسة تعليم اللغة الإنجليزية، كلية اللغة والأدب، جامعة سرايا الحكومية، سرايا، إندونيسيا
* الباحث المراسل: iklilsaifulloh@unim.ac.id

Introduction

Literacy education in Indonesia continues to face structural challenges. Although young Indonesians increasingly engage with digital platforms (Janks, 2012; UNICEF, 2021; Mochammad Abdul Machfud *et al.*, 2024) Classroom practices remain dominated by conventional lecturer-centred instruction (Kim *et al.*, 2023). With a uniform national curriculum, emphasis on memorisation, and the persistent use of the grammar-translation method (Liang & Lim, 2021) A persistent gap emerges between classroom literacy and students' lived cultural realities. (Marangell & Randall, 2025). This gap is further reinforced by the privileging of academic articles in English and Western-centred sources as the most legitimate texts (Meighan, 2023). while local literacies such as *pesantren* (Local Islamic Boarding School) traditions, ecological knowledge, and community narratives remain marginalised in formal academic spaces and narrow the scope of New Literacy Studies (J. Clarke *et al.*, 2020; Mills, 2010; NLG, 1996; Street, 2003), limiting its capacity to connect with learners' lived experiences and pressing environmental concerns.

The rapid integration of Artificial Intelligence (AI) in higher education has introduced new complexities. AI tools facilitate multimodal design, language exploration, and adaptive learning (Joshi, 2023). However, unresolved dilemmas persist, as concerns about authenticity and originality do, as students may rely on AI outputs rather than developing their own critical reasoning. (Deep, 2025). Likewise, the flood of AI-generated texts challenges educators to sustain meaningful engagement with authenticity and to engage in critical interpretation. (Sowa *et al.*, 2025). At the same time, literacy itself has undergone significant reconceptualisation globally. Once centred on canonical Western texts, it now encompasses

diverse Indonesian authors and marginalised voices (Ungureanu, 2024). This shift reflects broader intellectual currents from humanism to constructivism, from positivism to post-humanism, positioning literacy as a mediating tool for global challenges, including climate change (Gare, 2006). The shifts highlight the need for literacy pedagogies that connect technological competence with ecological responsibility.

At the same time, only a limited number of Islamic universities in Indonesia have adopted a green-ecological curriculum that integrates environmental ethics, local wisdom, and digital innovation. The university is one of the distinctive models in which eco-literacy is woven together with AI-mediated learning as part of its institutional identity. This hybrid configuration renders the university a particularly relevant context for examining how overt instruction is re-negotiated when ecological values, Islamic educational traditions, and emerging technologies intersect within English language learning.

Despite growing scholarship on literacy and AI, key research gaps remain. First, while Indonesian youth engage deeply with digital platforms, adult university learners do not consistently demonstrate comparable digital literacy (We Are Social, 2023). Second, at the theoretical level, discussions of learner autonomy in AI-mediated environments remain underdeveloped, often staying at the conceptual surface rather than demonstrating how autonomy occurs in practice (Gonçalves *et al.*, 2024). Third, digital literacy research has leaned heavily on test-based measures, with limited attention to students' reflective, critical, and ethical capacities (Govender, 2025). Fourth, eco-literacy research in multiliteracies tends to be concentrated in Euro-American settings (Vetter, 2022), leaving Global South contexts underrepresented. Studies in

Indonesia by Nuvitasari *et al.* (2020) and Misa (2023) have examined reading practices. However, few have examined how overt instruction, learner autonomy, ecological literacy, and AI tools interact in English language classrooms.

The multiliteracies pedagogy (Cope & Kalantzis, 2016; 2015; NLG, 1996) emphasises situated practice, overt instruction, critical framing, and transformed practice. The Multiliteracies Pedagogy Framework reconceptualises literacy as plural, multimodal, and culturally grounded. Within this framework, overt instruction can be re-imagined not as a banking model (Freire, 2020), but as dialogic scaffolding that balances explicit guidance with learner autonomy and ecological meaning-making.

In light of these issues, the study addresses the following question: How does the integration of AI, lecturer overt instructions, and local literacies balance explicit instruction and learner autonomy in shaping eco-literacy in EFL classrooms?

Literature Review

The role of overt instruction in contemporary pedagogy remains widely debated. Traditionally, overt instruction is associated with explicit, lecturer-centred approaches that prioritise content delivery over learner autonomy. (Gee, 2002; Gonçalves *et al.*, 2024; Mims-Word, Marsha., 2016; Wael & Laurens, 2015). However, this framing has increasingly been questioned within current pedagogical debates.

In the age of artificial intelligence (AI), this tension has become more visible. While AI technologies are increasingly celebrated for enabling personalisation, adaptive, and multimodal design (Stosic *et al.*, 2025; Vorobyeva *et al.*, 2025). Many classrooms continue to operate within frameworks that privilege the authority of lecturers and official

texts, thereby constraining the emancipatory potential of AI-enhanced learning environments. This suggests that technological innovation alone does not automatically transform pedagogy; instead, pedagogical assumptions determine how technology is used.

Scholars drawing on Pierre Bourdieu (1991) Have highlighted how classroom practices reproduce forms of *social* and *academic capital*, privileging students whose backgrounds align with dominant literacies while marginalising others. When English-language academic articles or Western-centred sources are positioned as the most legitimate texts, students' local literacies (Saifulloh *et al.*, 2025a), including community narratives, ecological knowledge, or religious traditions, are often excluded, a process that Kalantzis and Cope (2000) Identify as symbolic violence. This dynamic reinforces hierarchies of knowledge and identity rather than embracing plurality. This critique aligns with multiliteracies pedagogy. (NLG, 1996) which calls for the recognition of plural literacies and diverse language forms within classroom practice.

Critical pedagogy perspectives, especially Freire's (2020) the notion of *problem-posing education* further problematizes traditional models of overt instruction. Freire's work emphasises dialogic engagement, in which learners' lived experiences are validated, and knowledge is co-constructed. Recent studies have argued that in AI-mediated contexts, overt instruction does not need to reproduce the "banking" model but can instead serve as scaffolding that fosters reflection, critical thinking, and creativity (Glimäng & Magadán, 2023; Lee *et al.*, 2021; Pires Pereira, 2022; Pooley, 2020).

Foucault's (1982) The Theory of Discourse and Power adds another layer to this debate. Educational discourse determines who is

authorised to speak, which language is considered legitimate, and what forms of knowledge are silenced. This perspective illustrates how both covert and overt forms of control can persist even in technologically advanced classrooms. Research on ecological literacy, in particular, has shown that global discourses are often legitimised only when framed in Western academic registers. In contrast, local issues are undervalued unless translated into such registers (Misa *et al.*, 2023). Within AI-mediated classrooms, overt instruction can serve as a means of guiding students toward authentic use of digital tools, ensuring that AI-generated outputs are critically interrogated rather than uncritically adopted.

From a linguistic perspective, Halliday's (as cited in Riaz *et al.*, 2022) Systemic Functional Linguistics has been widely applied to understand how learners design meaning across ideational, interpersonal, and textual dimensions. Studies indicate that overt instruction, when aligned with multiliteracies pedagogy, can enable students to reframe ecological issues as socially constructed (Saifulloh & Anam, 2022) position themselves as active voices within public debates, and experiment with multimodal texts that challenge dominant forms of academic discourse (Knobel & Lankshear, 2015). In this sense, overt instruction becomes a mediating practice that supports agency, critical literacy, and ecological consciousness rather than merely transmitting content.

Overt Instruction in AI-Mediated Pedagogy

Artificial intelligence (AI) is now deeply embedded in educational settings, and its influence is felt strongly in language learning. While many see AI as a transformative force, its impact remains complex and sometimes contradictory. AI is often promoted as a catalyst for personalisation and adaptive

learning (Deep, 2025; George & George, 2020; Sowa *et al.*, 2025; Stosic *et al.*, 2025), yet its classroom implementation has frequently reinforced traditional patterns of overt instruction. The lecturer-centred control and pre-scripted sequences continue to dominate, restricting students' agency and narrowing possibilities for dialogic engagement (Böheim *et al.*, 2021; S. N. Clarke *et al.*, 2016; Tang & Putra, 2025). This contradiction revealed that although AI is celebrated as a means of supporting learner autonomy, it is often deployed in ways that reproduce legacy pedagogies rather than disrupt them.

Nguyen and Trinh's (2023) A bibliometric review of learner autonomy studies from 2000 to 2022 highlights that, despite a surge in publications, theoretical development in this area remains underexplored. Much of the work has focused on outcomes-based frameworks, treating autonomy as a discrete skill to be measured rather than as a dynamic pedagogical orientation. Similarly, Sharma *et al.* (2023) Mention that digital literacy often privileges test performance and input-output efficiency, overlooking reflective and critical thinking.

The multiliteracies framework proposed by the New London Group (1996) and expanded by Cope and Kalantzis (2000; 2009, 2016; 2015) provides a counterpoint to these tendencies. It is four interrelated components: situated practice, overt instruction, critical framing, and transformed practice, as envisioned learning is multimodal, participatory, and culturally embedded. Within this framework, overt instruction is not rejected but repositioned: rather than reproducing Freire's (2020) "banking model," it functions as a dialogic scaffolding that enables learners to move toward self-regulated and creative engagements with complex texts. When AI tools are designed around behaviourist feedback loops or rigid algorithmic pathways, however, they risk translating overt instruction

into automated control.

Autonomous learning, as framed by Dang (2012) and Nguyen (2024), refers to learners' capacity to direct their own learning processes, including selecting content, pacing their study, and shaping learning strategies. Within English language education, autonomy has been linked to motivation, engagement, and deeper learning outcomes, particularly when students engage with texts that resonate with local cultural identities and community concerns (Hossain, 2024). Related scholarship also argues that autonomy is strengthened when learners are positioned as designers of meaning rather than passive recipients of information.

The Indonesian Islamic university context offers a particularly compelling case for rethinking overt instruction in the AI era. Here, literacy practices are often intertwined with ecological awareness, ethical reasoning, and spiritual values, reflecting what some scholars describe as eco-Javanese ethics (Saifulloh *et al.*, 2025c). In this study, eco-literacy refers to an awareness of how human life is interconnected with ecological systems, alongside the ability to make thoughtful and ethical decisions about environmental issues (Capra, 2003; SJ, 1984; Stibbe, 2015). Within language learning, eco-literacy extends beyond knowledge of environmental issues to include critical engagement with ecological discourse (Saifulloh *et al.*, 2025), multimodal representation of environmental concerns, and sensitivity to place-based cultural knowledge. Such orientations suggest that AI should not be limited to grammar correction or quiz generation, as is common in current practice, but rather function as a dialogic partner that amplifies learners' voices and supports exploration across diverse semiotic and ecological landscapes.

Yet, as Hossain (2024) observes, many AI systems continue to be developed with an

emphasis on surveillance, performance prediction, and narrow success metrics, thereby reinforcing overt instruction through algorithmic regulation rather than enabling autonomy. These discussions point to a persistent gap in the literature. While research has documented the affordances of AI in enhancing efficiency, far fewer studies have examined its role in fostering autonomy, particularly in non-Western or Global South contexts (Li & Wekesa, 2022; Oliveira, 2019). Moreover, autonomy is still frequently conceptualised as an individual competence rather than as a socially situated and culturally mediated process, thereby underexploiting the multiliteracies dimension. The present study addresses these gaps by examining how overt instruction operates in AI-mediated English-language classrooms in Indonesia, particularly with respect to eco-literacy and multiliteracies.

Methods

The main objective of this study was to investigate how AI-assisted multiliteracies pedagogy could foster or inhibit learner autonomy in a classroom that remains characterised by overt instruction. The research aimed to analyse how instructional language, classroom discourse, and student engagement with AI revealed shifts or resistances towards more autonomous and critically framed learning. To address this objective, the study employed a transformative qualitative case study design in an English Language Learning (ELL) course within a private Islamic green university in Indonesia (Isaiah Omodan, 2020; Kangas & Rasi, 2021; Mertens, 2017). The transformative case study design was selected because it enabled inquiry into pedagogical change, power relations, and identity negotiation in technology-mediated contexts (Mertens, 2017).

The research site was intentionally selected because the institution embedded ecological

values, Islamic ethics, and digital innovation in its curriculum. This unique environment made it appropriate to examine how overt instruction was renegotiated as ecological literacy (Saifulloh *et al.*, 2023), AI mediation, and multiliteracies intersected. The focal class was part of a Digital Literacies course, in which students engaged in project-based learning supported by AI tools (e.g., ChatGPT, Canva, DeepSeek) to produce ecological-themed multimodal texts, including posters, short documentaries, podcasts, and digital news articles.

Research Design

The case study approach was selected because of the bounded nature of the classroom as a site of pedagogical experimentation and its richness in context-specific detail. The study provided thick descriptions and conceptual insights to similar classrooms navigating tensions between instruction, technology, and student agency. Moreover, the use of a transformative case study allowed the researcher to engage critically with how AI intersects with both pedagogy and identity. It was not merely an investigation into classroom activity, but an inquiry into how human-machine interaction could either reproduce or dismantle traditional instructions, especially in a setting charged with ecological and ethical values.

Participant Recruitment

Participants were recruited through purposive sampling, with emphasis on relevance to the research question. One class of twenty-eight undergraduate students and their lecturer were selected as the primary subjects. The students were enrolled in a semester-long course on digital literacy and critical use of English. To maintain data trustworthiness, the students were informed of the research aims, ethics, and the voluntary nature of participation before the class. In addition, the lecturer, who

also co-designed the course materials, was acknowledged as part of the pedagogical context; however, the analysis focused on classroom interaction patterns rather than on the instructor's biography.

Data Collection

Classroom observation was the primary data collection method and was conducted over eight weeks, with two sessions per week. Observations were documented through detailed field notes and audio-visual recordings. The focus was on naturally occurring classroom discussions, group work, interactions with AI tools, and moments when students negotiated or subverted instructional norms. Complementing the observations, student artifacts (e.g., posters, scripts, prompt outputs, and video segments) were collected as multimodal evidence of learning processes. Three instruments supported data collection: a structured observation protocol adapted from multiliteracies pedagogy indicators. (Cope & Kalantzis, 2016), a semi-structured interview guide with open-ended questions exploring autonomy and AI engagement, and an artefact analysis rubric for examining multimodal design, AI integration, and ecological literacy.

Data Analysis

Data were analysed in thematic analysis (M. B. Miles, A. M. Huberman, and J. Saldana, 2014). Thematic categories were generated both inductively from classroom events and deductively from key concepts in multiliteracies pedagogy, with a focus on overt instruction and autonomous learning. Visual artefacts were analysed using a simplified multimodal discourse framework, examining layout, image-text relations, colour, and AI-generated design templates. This analysis helped determine whether students engaged critically with AI or adhered to predetermined patterns. Analysis proceeded through three coding cycles: open coding, focused coding,

and category refinement (Saldaña, 2021). Emerging codes were compared across datasets to identify convergent and divergent patterns. NVivo software supported data organisation and analytic memo.

Findings

Promoting inclusive, high-quality education required explicit yet dialogic teaching practices that enabled all learners to engage critically and equitably. The lecturer demonstrated an understanding of each learner's trajectory and provided the intellectual repertoire that allowed literacy to develop in meaningful ways. Building on this principle, the present study examined how overt instruction, when combined with generative artificial intelligence, served as a catalyst for agency and equity in an English-language classroom at an Indonesian Islamic green university. The pedagogical process resonated strongly with Freire's (2020) critique of "banking education," where lecturers merely deposit fixed truths. Here, overt instruction shifted toward *problem-posing education*: students' lived experiences were validated, and learning became a genuinely dialogic encounter. Praxis or reflective action emerged as lecturers scaffolded ecological concepts and multimodal design while simultaneously learning from students' interpretations and AI-supported digital productions.

The trajectory across the classroom illustrated how overt instruction, when grounded in multiliteracies pedagogy (Cope & Kalantzis, 2016; 2015; NLG, 1996) and infused with Freirean problem-posing education, evolved from structured guidance into a practice of co-creation that broadens both cognitive and affective dimensions of learning. Emotional scaffolding, dialogic questioning, and carefully sequenced multimodal demonstrations invited students to "read the word and the world," cultivating ethical

awareness alongside ecological insight. As AI tools such as ChatGPT, Canva, and Veed.io entered the process, students gradually internalised the lecturer's modelling and repurposed these technologies as partners in inquiry. The transformation from guided participation to autonomous design illustrated how generative AI could diversify learning styles and expand access to high-quality education, particularly in contexts where local culture and global technologies were negotiated alongside one another. The observational data analyzed in this section were drawn from the broader dataset collected as part of the author's doctoral dissertation research (Saifulloh, 2026).

Lecturer-Guided Learning

In the framework of multiliteracies pedagogy, overt instruction was understood as guidance that worked alongside students' lived experiences rather than replacing them. It acknowledged what students already knew and used that as an entry point for learning. In this subtheme, the analysis focused on instances in which the lecturer provided structured guidance that shaped students' approaches to ecological content and AI tools. Rather than acting solely as an authority figure, the lecturer shifted among directing, prompting, and posing open-ended questions, depending on students' responses during classroom activities.

Observations showed that students often relied on quick online searches or AI-generated results when completing tasks. However, they frequently struggled to evaluate or interpret the information critically without guidance.

One example occurred in the first week when the lecturer asked: "Why is environmental literacy important? On what basis does this environment need to be defended?" (Observation 1, October 4, 2024). Most students responded with short definitions sourced from Google. "It says it is important because the environment must be protected."

(Observation 1, October 4, 2024).

This exchange suggested that, without scaffolding, environmental literacy was initially treated as a matter of fact rather than as an inquiry that required reasoning and judgment. This questioning did not stop at the cognitive level; it also aimed to remind students of ethical orientations appropriate to the campus context and local wisdom. The lecturer even challenged students not to be satisfied with instant knowledge from the internet, but to take the risk of engaging with ecological dilemmas and to listen to the voices of affected communities.

Similar guidance was evident during the visit to the post-stone mining village, where, before students interviewed residents, the lecturer asked them to note what they saw, heard, and felt rather than immediately seeking explanations. He emphasised that field experiences should be read as living texts that taught ecological responsibility. Student involvement in the 6,000-tree planting program stemmed from the lecturer's instruction, who systematically divided assignments, from correspondence to documentation, so that students felt that literacy was not just discourse, but collective action.

In another meeting, the lecturer's guidance was evident in his connection of popular culture to ecological issues. For example, when Adel and Icha (BTS fans) created a digital poster titled "*Reforest Revolution*" with a hashtag that combined BTS fandom and environmental campaigns.

The lecturer did not stop at creative appreciation; instead, the lecturer asked: "How do you move from fan loyalty to planetary loyalty (eco-literacy awareness)?" (Observation 12, December 15, 2024).

This question prompted students to move beyond expressions of fandom toward ethical reflection on the interconnectedness of culture,

community, and the Earth, informed by their idol as a model of literacy sponsorship.

Observational evidence also showed that in discussions of digital or online news, the lecturer actively challenged students to read beyond media discourse. He used Google Year in Search as a trigger, then directed students to analyse news framing through an ecolinguistics approach drawn from Arran Stibbe's work. When students got stuck on descriptive summaries from Google, the lecturer asked, "How can an alternative narrative that is more pro-sustainable be constructed? There are always dual assumptions... or who gains the most benefit from the news?" (Observation 12, December 15, 2023).

During a session drawing on the recently announced Google Year in Search top-ten list, the lecturer invited students to interrogate the motives underlying a news item from The Jakarta Post (a national newspaper). The discussion revealed that, without guided questioning, students were easily influenced by the article's framing and accepted its opinions as facts, showing little awareness of the interests that might have shaped the narrative. This questioning style encouraged students to examine power relations within digital texts rather than repeating AI-generated summaries.

Across observations, lecturer guidance served as a scaffold, supporting students in moving from information retrieval to interpretation, critique, and ethical reflection. Without direct guidance, students tended to stop at information searching or superficial expression. With the lecturer's guidance, each experience was reorganised into an ethically nuanced, critical, and action-oriented form of environmental literacy. The lecturer's instruction deconstructed students' habits of scrolling through social media for quick information and helped them develop their own modes of discussion and critical questioning.

Students responded to one another with nods, murmurs, or follow-up questions drawn from their prior experiences. They were not only learning about themselves but also sensing how their lives were connected to a broader world. When they began to talk about care for people, they sometimes found themselves moving almost naturally into the language of care for nature. Gratitude, kindness, and service were no longer limited to human relationships but extended to rivers, forests, and soil that made those relationships possible. This indicated that overt instruction sometimes enabled dependency, particularly when tasks involved uncertainty. Overall, the data suggested that lecturer-guided learning shaped how students interpreted ecological issues and engaged with AI tools. Guidance did not eliminate autonomy; instead, it helped students negotiate when to rely on AI outputs and when to question them.

Scaffold the Text

In the multiliteracies framework, overt instruction referred to moments when the lecturer made underlying structures of meaning visible and discussable (NLG, 1996). In this class, overt instruction took the form of guided exploration supported by deliberate scaffolding. The “texts” under examination were not limited to written passages but included slides, visual compositions, phrases, and film sequences, each functioning as a prompt for ecological inquiry.

A PowerPoint presentation appeared on the whiteboard, each slide carefully composed, alongside the short film *Jiwa Jagad Jawi*. Both resources served as entry points that helped students notice how ecological ideas are shaped through narrative, imagery, and design. The aim was not simply to inform but to equip students with a metalanguage that could travel across modes and contexts, enabling them to recognise how design, image, and narrative

shape environmental understanding.

Within this broader frame of overt instruction, scaffolding the text emerged as a strategy that encouraged students to examine ecological discourse across modes and languages. Rather than delivering explanations, the lecturer presented a sequence of prompts designed to make meaning structures more accessible. This approach aligned with multiliteracies principles that emphasised explicit attention to how texts work.

During the overt-instruction stage, the lecturer treated the lesson as an investigation rather than a lecture. On the first slide, only two lines appeared: “Human Above All and Nature as Kin”. The lecturer withheld explanation and asked, “What do these say to you?” Students responded cautiously at first, writing notes or checking quick definitions on their phones. Responses included: “human in control,” “family of nature,” and “ownership versus belonging.” (Observation 1, October 4, 2024). The range of answers indicated that students initially interpreted the phrases descriptively rather than analytically.

Scaffolding continued through incremental guidance. Students were asked to track nickel mining that feeds electric-vehicle batteries, assess how many hectares of Kalimantan Forest have been cleared, and compare those numbers with the “zero-emission” slogans they see online. Reactions were quick and unscripted. “I thought green cars were always good,” one said. Another shook her head, “Even eco-friendly products can destroy the earth if we do not ask where they come from.” (Observation 1, October 4, 2024). These comments suggested that scaffolding helped students reconsider assumptions shaped by online environmental narratives.

The class finished with phrases from the *Jiwa Jagad Jawi* movie. There was a Javanese quotation: “Mother Earth and Father of the

Universe, Enhance the Beauty and Harmonise the World." Students wrote responses on the whiteboard, slipping between English and Javanese as they linked local cosmology to global debates. The lecturer modelled text interpretation when necessary, but also stepped back to allow peer discussion to unfold.

Analytically, the scaffolding observed reflected key principles, including modelling, contextualization, and the gradual release of responsibility. The scaffold questions were adjusted based on students' responses, consistent with Vygotskian ideas of support within the zone of proximal development. Questioning also reflected a problem-posing orientation, as students were asked to interrogate claims embedded in "green" marketing and popular sustainability discourses.

Through the lens of multiliteracies pedagogy, this episode illustrated how overt instruction served as a bridge between exposure to multimodal texts and critical engagement with them. By working across film clips, slides, and symbolic phrases, students developed a shared vocabulary for questioning cultural and political assumptions embedded in ecological narratives. Rather than passively accepting ecological claims, students engaged in co-constructed inquiry that identified tensions between environmental messaging and lived realities.

Autonomous Learning with AI

The deliberate integration of generative-AI tools, ChatGPT, Canva, Veed.io, and the locally developed Nawasena, introduced a shift in classroom dynamics, especially in a course that initially relied on structured guidance. From the outset, the lecturer took a calculated risk: students were encouraged to search freely on Google and to use GPT in real time during class. This decision functioned as diagnostic scaffolding to observe how students engaged

with AI without guidance.

Early discussions displayed a "headline mentality." Students skimmed trending articles, repeated algorithmic summaries, and offered decontextualised facts with little verification.

One student, for instance, read a climate statistic from Google and added, "I'm not sure what it means, but it sounds correct". These moments indicated that the unrestricted use of AI tended to favour quick answers over deeper analysis. Recognising the risk, the lecturer shifted from open facilitation toward more structured guiding questioning, such as: "What assumption is the AI making here?" and "Whose interest does this statistic serve?" (Observation 2, October 11, 2024). Metacognitive scaffolds challenged students to examine not only the content of AI output but the assumptions beneath it. Gradually, the class moved from consuming machine answers to interrogating them, testing data against local realities, and refining ideas through sustained dialogue.

Once students had wrestled with sources and had built their own conceptual frameworks, the lecturer invited them to return to AI, this time as designers rather than recipients. Through guided practice with the RACE framework (Role, Action, Context, Expectation), they learned to write precise prompts, evaluate AI-generated drafts, and make editorial decisions that foregrounded their own voices. Initial scepticism gave way to discovery. "I didn't know I could ask AI to refine this idea!" one student exclaimed, beginning a flurry of revisions. Another reflected, "I used ChatGPT for an outline, but then rewrote it in my own way. It helped me see how to explain it better." (Observation 2, October 11, 2024). These reflections showed that students began repositioning AI as a support for their own reasoning rather than a substitute for it.

By the third week, peer discussions shifted

noticeably. Groups debated how to adjust AI settings to support their ecological narratives. In one activity, students critiqued Canva's default colour palettes for river-pollution posters: "(#StopRiverPollution posters) look dirtier, people need to feel the water's smell." (Observation 3, October 18, 2024). Others edited Veed.io's automated captions to reflect the emotional weight of environmental loss. Projects evolved from poems to digital poetry, from a short promotional video to a documentary-style podcast, and to websites that incorporate ecological narratives and fan-culture references. In these cases, AI acted as a tool that extended students' existing ideas rather than dictating them.

These themes illustrated a reconfiguration of classroom authority. Authority became shared: the lecturer provided prompts, AI offered options, and students made final decisions about meaning and design. This pattern reflected the development of self-regulated learning strategies, where students planned, monitored, and revised their work.

Viewed through the lens of multiliteracies pedagogy, this progression represented a shift from consuming AI output to designing meaning across modes and tools. It also resonated with problem-posing education, as students interrogated not only human-authored texts but also algorithmic ones. Across the semester, students increasingly revised AI drafts, questioned design choices, and connected ecological themes with local cultural references.

By the later weeks, the lecturer's role became lighter, marked by occasional questions or clarification, while students carried most of the interpretive work. AI tools functioned more as supports for thinking than as sources of final answers, and students gradually assumed greater ownership of their ecological and multimodal texts.

Classroom Snapshots

The gradual shift from lecturer-driven lessons to student AI-directed projects marked a turning point in the course and in students' sense of themselves as learners. What began as a straightforward digital poster and documentary assignment evolved into a workshop environment in which students served as designers, storytellers, and ecological advocates. Digital tools, Canva, Veed.io, ChatGPT, and the locally built Nawasena, served as instruments for shaping public messages rather than as sources of ready-made answers. The change was more than technological; it reshaped how knowledge was approached and how learner identities were formed.

The transition from lecturer-centred instruction to student-led creation proved to be one of the most revealing developments in the project. What initially appeared as a conventional task producing a poster or a short documentary on a local environmental issue gradually evolved into a collaborative studio setting where students deliberated over design decisions, questioned sources, and tested their ecological interpretations in front of peers. The change was not only organisational but epistemic: knowledge was no longer treated as transmitted content but as something constructed and contested.

The campaign #StopRiverPollution illustrated this transformation. Initially framed as a simple media task, it evolved into a suite of student-led interventions: interactive posters, mini-documentaries, and decision-based educational games. Each artefact required decisions about visual rhetoric, narrative stance, and ethical orientation. As the semester progressed, the lecturer intentionally reduced direct guidance, allowing earlier scaffolds to recede. This intentional reduction of guidance functioned as a pedagogical strategy that

enabled students to test analytic routines such as evaluating evidence, questioning “green” marketing claims, and comparing AI-generated content with local realities.

Concrete classroom moments demonstrated the depth of this work. In one group, a discussion emerged about colour choices for a poster. “Should the polluted river be in grayscale?” a student asked. “No, make it murky brown; people need to feel the dirt in the water,” another replied. (Observation 12, December 15, 2024).

They rejected Canva’s default palette and instead adjusted contrast and saturation manually to reflect the river they recognised from their field visit. Another group revised *Reboisasi*, combining raw footage of sludge-filled waterways with sequences inspired by *Jiwa Jagad Jawi*. Rather than relying on Veed.io’s automated captions, they collectively rewrote the text to ensure that the emotional tone matched the gravity of the depicted environmental loss.

A third team developed *Nawasena*, an educational game built around decision-based challenges. “I want the player to plant trees, but they have to choose the right location,” one student proposed. Another refined the dialogue through an AI prompt: “Make the character sound like an environmentalist, but friendly, like a lecturer.” By the final weeks, classroom authority had shifted entirely. “This part doesn’t flow,” a student noted during a video review. “Let’s ask ChatGPT for alternative phrasing,” another suggested (Observation 12, December 15, 2024). At this stage, the lecturer’s role shifted to offering clarifying questions or highlighting ethical considerations, positioning him as a co-inquirer rather than a director.

These themes reinforced a key principle in the literature on overt instruction: scaffolding must be temporary and responsive to student

growth. Early in the semester, the lecturer modelled multimodal analysis and critical reading of ecological discourse. As students gained confidence, these supports were intentionally reduced, enabling them to apply analytic strategies independently, source evidence, interrogate AI outputs, and negotiate how images, sounds, and narratives interact to convey ecological urgency. This pattern aligned with Vygotskian accounts of the internalisation of higher-order thinking, in which supported practice shifted to self-directed performance.

The process required ongoing moral and aesthetic judgment. Students grappled with the tension between the efficiency of AI-generated drafts and the authenticity of their own perspectives. They questioned whether an automatically generated caption could convey the emotional weight of witnessing pollution firsthand and debated the ethical implications of relying on AI to represent local ecological issues. These discussions echoed a central tenet of multiliteracies pedagogy: learners must not only use digital tools but also interrogate the ideological and political assumptions embedded within them. In this sense, digital creativity became a space for ethical inquiry rather than simply a technical exercise.

By the end of the semester, students had moved beyond being compliant task-doers. They acted as ecological communicators, producing artefacts intended for a public audience and grounded in local knowledge. Their posters, podcasts, and interactive games exemplified what design-based learning theorists described as transformative practice, a stage in which learners redesign meanings rather than reproduce them. This outcome aligns with broader understandings of learner autonomy, in which students set goals, monitor progress, and evaluate the implications of design choices in a real-world ecological context.

Critically, this development did not occur spontaneously. It emerged from a deliberate instructional sequence in which overt instruction first made the structures of ecological discourse visible, then gradually receded. Without the early modelling of analytic language, guided interrogation of anthropocentric and biocentric assumptions, and explicit questioning of digital representations of “green” marketing, students would not have developed the conceptual or ethical tools needed to craft the nuanced work evident in the final weeks. The lecturer’s gradual step back was therefore not withdrawal, but the culmination of a strategic design that affirmed learners’ capacity to act as reflective and socially responsible digital creators.

Discussion

The findings of this study prompted a thorough rethinking of overt instruction within multiliteracies pedagogy and its implications for educational quality. The New London Group (1996) described overt instruction as the stage at which lecturers “make the invisible visible,” providing the explicit metalanguage that enables learners to engage critically with texts and construct meaning across multiple modes. However, the classroom evidence in this study suggested that overt instruction functioned less as a linear stage and more as a contingent and responsive pedagogical process shaped by students’ responses, AI-mediated interactions, and ecological learning tasks.

At the outset, the lecturer encouraged students to rely on quick Google searches and generative AI outputs, anticipating that these initial attempts would be superficial. This decision revealed a pattern in the data: students engaged superficially with trending articles, repeated AI-generated summaries, and rarely questioned the assumptions embedded in those outputs. Rather than correcting students

immediately, the lecturer waited until students themselves recognised the limitations of their initial attempts. This sequence reflected the importance of productive discomfort, a finding also noted in studies on AI-supported learning that highlight the necessity of structured guidance to counteract overreliance on automated outputs (Depari & Lindell, 2023; Lee *et al.*, 2021; Nabhan, 2019; Settou *et al.*, 2022).

Once this gap became visible to the students, overt instruction re-emerged through explicit modelling, clarification, and guided questioning. This pattern demonstrated that overt instruction in an AI-mediated environment operated recursively: guidance was withheld, reintroduced, and adjusted in response to students’ interpretive needs. This finding clarified existing work on scaffolding by showing that instructional timing had to follow students’ shifts in understanding rather than a predetermined teaching sequence.

Such dynamics complicate Cope and Kalantzis’s (Bill Cope, 2000; Cope & Kalantzis, 2016; Kalantzis, 2015) Design-based model, which positioned explicit teaching at “key points” before students redesign meaning. This finding further clarified existing work on scaffolding by showing that instructional timing needed to follow students’ shifts in understanding rather than a predetermined teaching sequence. This indicates that in AI-supported contexts, overt instruction may need to be adaptive rather than sequential, intervening at critical junctures where students move from acceptance to interrogation of automated texts.

Freire’s (2020) The theory of problem-posing education provided another crucial lens, and the data here extended it. Freire rejected the

“banking” model of education and called for dialogue and praxis in which lecturers and students learn together. In this classroom, praxis unfolded in a space mediated by artificial intelligence: lecturer and students co-constructed knowledge while simultaneously interrogating the outputs of ChatGPT, Canva, and other platforms.

These findings contributed to the field on several levels. Conceptually, they proposed an expanded definition of overt instruction as a recursive and tension-filled (contingent) practice that incorporated planned moments (pauses) for students' recognition, sustained dialogue, and the strategic reintroduction of guidance.

Theoretically, this study extended multiliteracies pedagogy and Freirean problem-posing education by demonstrating that learner autonomy could be cultivated through the very technologies often feared to undermine it, provided those technologies were embedded in a pedagogy of critical delay and reflective redesign.

Methodologically, the study demonstrated how narrative observations and multimodal artefacts could trace the emergence of agency in AI-rich classrooms. In practice, it offered a framework for integrating generative AI not as an automated tutor but as a tool to support metacognitive awareness and critical decision-making.

By foregrounding the moments when students interrogated AI outputs, synthesised ecological field data, and revised multimodal texts, this research showed that overt instruction was not merely the explicit teaching of skills but a responsive interplay of modelling, questioning, and strategic withdrawal. In this dynamic, the lecturer and

students jointly refined knowledge and literacy practices, demonstrating that overt instruction remains central in an era of generative AI.

Conclusion and Implications

This study has shown how overt instruction, reframed as a recursive and dialogic practice, can harness generative AI to cultivate autonomy, critical literacy, and ecological awareness in an English-language classroom. By deliberately allowing students to begin with surface-level Google searches and AI-generated outputs, the lecturer transformed early superficiality into a productive failure that provoked deeper questioning. Guidance was withheld and reintroduced in cycles, enabling students to move from passive consumption of information to authentic multimodal production, documentaries, digital poetry, and interactive games that carried their own ecological and ethical perspectives. These outcomes directly address the research questions by demonstrating how overt instruction supports students' movement from initial dependence on AI outputs to independent critical design, and how multimodal ecological tasks enable students to connect AI-assisted inquiry with local environmental knowledge.

The findings also refine existing theoretical discussions: they show that overt instruction does not function as a fixed sequence but as a responsive cycle that adapts to students' interpretive needs within AI-mediated contexts. This contributes to multiliteracies scholarship by clarifying when and why explicit guidance is necessary, and by demonstrating how AI can both challenge and catalyse students' critical agency.

The research was conducted at a single Islamic “green” university and focused on a

single semester of coursework. Its qualitative design privileges depth over breadth, and the narrative data, while rich, cannot capture all variables influencing student agency, such as prior digital literacy or socio-economic background. The study examined AI-mediated learning but not the long-term retention of critical literacy skills following the course.

Further studies could test this recursive model of overt instruction across disciplines, institutions, and cultural contexts to determine its adaptability. Longitudinal research is needed to track whether the critical and ethical dispositions cultivated through AI-mediated multiliteracies persist over time. Comparative studies might also explore how different AI platforms or prompt-engineering strategies shape the balance between lecturer guidance and learner autonomy.

In practice, the findings offer a framework for educators seeking to integrate AI without sacrificing authenticity or ethical rigour. Lecturers can design “critical delays” in instruction to let students encounter and then interrogate the superficiality of instant AI answers, using generative tools as catalysts for reflection rather than substitutes for thought. This suggests a pedagogical model in which AI becomes an opportunity for metacognitive engagement rather than a shortcut, aligning classroom practice with the broader goals of quality education.

Conceptually, the study reconceives overt instruction as a cyclical negotiation of guidance and independence, challenging linear models of design-based learning. Methodologically, it illustrated how multimodal artefacts and AI-mediated dialogues can serve as valid evidence of critical agency, supporting the development of equitable and reflective learning

environments consistent with the aims of Sustainable Development Goal 4.

Disclosure statement

The authors declare that there is no conflict of interest.

- **Ethical approval and consent to participate:** This study was conducted in accordance with institutional ethical standards, and informed consent was obtained from all participants.
- **Availability of data and materials:** The data supporting the findings of this study are available from the corresponding author upon reasonable request.
- **Author contribution:** Ahmad Iklil Saifulloh: Conceptualization, methodology, writing original draft. Pratiwi Retnaningdyah: Supervision, review & editing. Ali Mustofa: Supervision, review & editing.
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